

Application No.: 10/782326  
Docket No.: HP0085USNA

Page 3

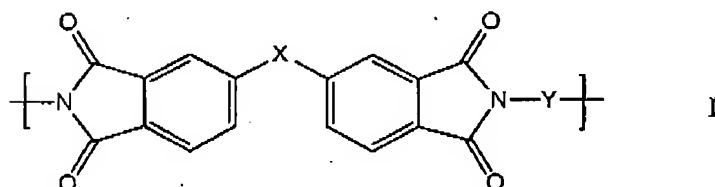
Amendments to Claims

RECEIVED  
CENTRAL FAX CENTER

OCT 18 2007

What is claimed is:

1. (Currently Amended) A polyimide based composition consisting essentially of a polyimide component and an organic solvent, the polyimide component being represented by formula I:



wherein X is O, S(O)<sub>2</sub>, C(CF<sub>3</sub>)<sub>2</sub>, or a mixture of two or three of O, S(O)<sub>2</sub>, and C(CF<sub>3</sub>)<sub>2</sub>;

wherein Y is diamine component selected from the group consisting of m-phenylenediamine (MPD), 3,4'-diaminodiphenyl ether (3,4'-ODA), 4,4'-diamino-2,2'-bis(trifluoromethyl)biphenyl (TFMB), 3,3'-diaminodiphenyl sulfone (3,3'-DDS), bis-(4-(4-aminophenoxy)phenyl) sulfone (BAPS) or 9,9-bis(4-aminophenyl) fluorene (FDA);

with the proviso that:

- i. if X is O, then Y is not m-phenylenediamine (MPD), bis-(4-(4-aminophenoxy)phenyl) sulfone (BAPS) and 3,4'-diaminodiphenyl ether (3,4'-ODA);
- ii. if X is S(O)<sub>2</sub>, then Y is not 3,3'-diaminodiphenyl sulfone (3,3'-DDS);
- iii. if X is C(CF<sub>3</sub>)<sub>2</sub>, then Y is not m-phenylenediamine (MPD), bis-(4-(4-aminophenoxy)phenyl) sulfone (BAPS), 9,9-bis(4-aminophenyl) fluorene (FDA), and 3,3'-diaminodiphenyl sulfone (3,3'-DDS);

wherein the organic solvent:

- i. is a liquid capable of suspending or dissolving the polyimide,

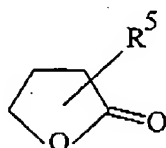
Application No.: 10/782326  
Docket No.: HP0085USNA

Page 4

- ii. has a Hanson polar solubility parameter between and including any two of the following numbers 2.5, 3.0, 4.0, 5.0, 6.0, 7.0, 8.0, 9.0, and 10.0; and
- iii. has a normal boiling point between and including any two of the following numbers 180, 190, 200, 210, 220, 230, 240 and 250°C

wherein the organic solvent is a member of a group consisting of:

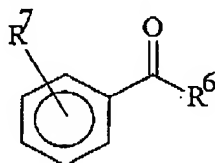
- a. a liquid represented by formula II:



II

and wherein R<sup>5</sup> is H, CH<sub>3</sub>, or CH<sub>3</sub>CH<sub>2</sub>;

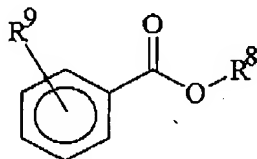
- b. a liquid represented by formula III:



III

wherein R<sup>6</sup> is H, CH<sub>3</sub>, CH<sub>3</sub>CH<sub>2</sub>, or OCH<sub>3</sub> and wherein R<sup>7</sup> is H, CH<sub>3</sub>, or CH<sub>3</sub>CH<sub>2</sub>;

- c. a liquid represented by formula IV:



IV

wherein R<sup>8</sup> is CH<sub>3</sub>, or CH<sub>3</sub>CH<sub>2</sub> and wherein R<sup>9</sup> is H, CH<sub>3</sub>, or CH<sub>3</sub>CH<sub>2</sub>;

- d. 2-phenoxyethanol;

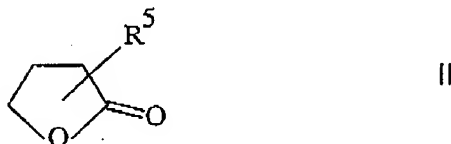
Application No.: 10/782326  
Docket No.: HP0085USNA

Page 5

e. tetrahydrofurfural acetate; and

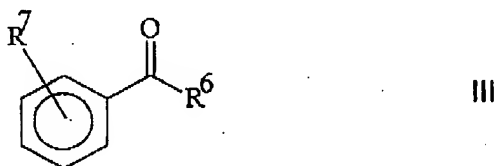
f. combinations thereof.

2. (Original) A composition in accordance with Claim 1, wherein the organic solvent comprises a liquid represented by formula II:



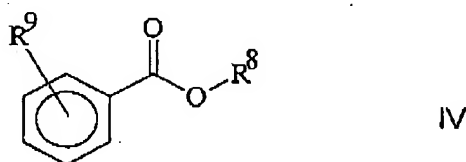
and wherein R<sup>5</sup> is H, CH<sub>3</sub>, or CH<sub>3</sub>CH<sub>2</sub>.

3. (Original) A composition in accordance with Claim 1, wherein the organic solvent is a liquid represented by formula III:



and wherein R<sup>6</sup> is H, CH<sub>3</sub>, CH<sub>3</sub>CH<sub>2</sub>, or OCH<sub>3</sub> and wherein R<sup>7</sup> is H, CH<sub>3</sub>, or CH<sub>3</sub>CH<sub>2</sub>.

4. (Original) A composition in accordance with Claim 1, wherein the organic solvent is a liquid represented by formula IV:



and wherein R<sup>8</sup> is CH<sub>3</sub>, or CH<sub>3</sub>CH<sub>2</sub> and wherein R<sup>9</sup> is H, CH<sub>3</sub>, or CH<sub>3</sub>CH<sub>2</sub>.

5. (Original) A composition in accordance with Claim 1, wherein the organic solvent is selected from the group consisting of 2-phenoxyethanol and tetrahydrofurfural acetate.

Application No.: 10/782326  
Docket No.: HP0085USNA

Page 6

6. (Currently Amended) A composition according to Claim 1 wherein the polyimide component is present in the composition ~~at a weight ratio of A:B~~ wherein A is the polyimide component and B is the sum of the polyimide component and the organic solvent, and wherein A is between, and including, any two of the following numbers 0.05, 0.06, 0.07, 0.08, 0.09, 0.10, 0.15, 0.20, 0.40, 0.60, 1.0, 2.0, 3.0, 4.0, and 5.0 and B is 100.

7. (Currently Amended) A composition according to Claim ~~6~~ 1 wherein A is between, and including, any of the two following numbers 10, 11, 12, 13, 14, 15, 16, 17, 18, 19, 20, 21, 22, 23, 24, 25, 26, 27, 28, 29 and 30 and B is 100.

8. (Currently Amended) A composition according to Claim 1 wherein further comprising from 0 to 30 mole percent of the diamine component is selected from the group consisting of 3,3'-dihydroxy-4,4'-diaminobiphenyl (HAB), 2,4-diaminophenol, 2,3-diaminophenol, 3,3'-diamino-4,4'-dihydroxy-biphenyl, and 2,2'-bis(3-amino-4-hydroxyphenyl) hexafluoropropane.

9. (Currently Amended) A composition according to Claim 1 further comprising a thermal crosslinking agent selected from the group consisting of bisphenol epoxy resin, an epoxidized copolymer of phenol and aromatic hydrocarbon, a polymer ~~derived from~~ of epichlorohydrin and phenol formaldehyde, and 1,1,1-tris(p-hydroxyphenyl)ethane triglycidyl ether.

10. (Original) A composition according to Claim 1 further comprising a blocked isocyanate.

11. (Currently Amended) A composition according to Claim 1 further comprising a metal adhesion agent selected from group consisting of polyhydroxyphenylether (PKHH), polybenzimidazole, ~~polyetherimide~~, and polyamideimide.

12. (Original) A composition according to Claim 1 further comprising a metal or metal oxide.

13. (Original) A composition according to Claim 12 wherein the metal or metal oxide is pretreated with a silane or titanate agent.